containing chlorophyll of a pale green or nearly yellow colour;—these two parts form the oblong and slightly concave cup already referred to, at the bottom of which the vascular system, considerably increased, is placed. Lastly, these vessels or reticulated cells are covered by utricles of a carmine red colour. They form on the surface of the cup, with the vascular cells which they enclose, a prominent oblong gland, which is very elegantly bordered by the periphery of the cup.

The order in which these elements are presented, is not without analogy with that which rules the arrangement of those of the stem of a Dicotyledonous plant. Thus, in this respect, we may compare these marginal glands (as has been done with leaves) to a segment of the stem of a plant with two cotyledons. Thus at the exterior of the gland there is an epidermis as in the segment of stem, and then a layer of cells with green matter, representing the herbaceous envelope; then the vessels as in a stem; and lastly, the rose-coloured cellular tissue of the gland represents the pith. This comparison is the more just, as the glands which fringe the leaf are, so to speak, only the termination of the delicate teeth of the latter represented by the pedicels, just as the marginal glands of the stipules of roses terminate their much shorter teeth and even their nervures.—*Comptes Rendus*, 25th June 1855, p. 1355.

On a new Organ observed in Callitriche (C. platycarpa, *&c.*). By M. A. Chatin.

The organs for which I propose the name of cystiæ give a whitish appearance to the lower surface of the leaves in *Callitriche*, where they exist in immense number. Under the lens they appear like brilliant points, but the microscope shows that each cystia is a small utricular apparatus presenting a closer esemblance to a doctor's cap*.

The cystiæ are usually formed of eight cells, enlarged at their apical or free portion, and united in a common, narrow circular base, inserted into the larger, irregular cells of the epidermis. Towards the middle and upper parts the cystia is adorned with ribs, like some Cucurbitaceous and Euphorbiaceous fruits (especially that of *Hura crepitans*).

These organs are at first filled with a liquid, which is often replaced by gases (oxygen, nitrogen, and carbonic acid) towards the period of flowering. The liquid usually contained in these organs contains floating granules, which sometimes attach themselves to the walls, and which are, for the most part, rendered brown by iodine. The cystiæ when filled with gas serve as floats; their presence coincides with the absence of pneumatophora in the tissue of the leaves.

The organogeny of the cystiæ is peculiar. Each of them, like the stomata, arises from a cell which is distinguished by its small size and its rounded form from the large twisted cells which constitute the epidermis. Like that of the stomata, the original cell of the

* The peculiar structure in question was described by Dr. Lankester in 1850; see *Ann. Nat. Hist.* vol. vii. S. 2. p. 423.—Ed.

cystiæ is soon divided by a septum, and if at this moment it did not rise above the epidermis, it would be impossible to say decidedly whether it was a cystia or a spiracle in course of development. But afterwards the two cells of the cystia each divide into two others, forming four cells, which by a further subdivision are converted into the eight elements composing the perfect organ.

All the stomata of the lower surface of the leaves, and those of the stalk, give place in this manner to cystiæ, whilst the transformation only takes place in the minority of those placed on the upper surface of the leaves. Thus nature makes use of an organ already existing to form a new apparatus.—*Comptes Rendus*, 18th June 1855, p. 1291.

Description of a new Tanager of the Genus Calliste.

By Philip Lutley Sclater, M.A.

Calliste venusta, Sclater. *C. læte cæruleo-viridis : interscapulio alis caudaque nigris, eodem viridi limbatis : fronte, loris, gula summa et auchenio nigris : pileo lateribusque capitis flavis : ventre medio crissoque pallide ochraceis : rostro nigro : pedibus pallidis.*

Long. tota 4·5 ; alæ 2·5 ; caudæ 1·5 poll. Angl.

Hab. In Nova Grenada et in rep. Equatoriana provincia Quixos.

I have been acquainted with this pretty *Calliste* for some time, but have always considered it as the *xanthocephala* of Tschudi, and have described it as such in my "Synopsis of the genus *Calliste*" in the Contributions to Ornithology. But having lately had the opportunity of examining Tschudi's type specimens in the Neuchâtel Museum, I find that his *Callospiza xanthocephala* is not this bird, but the same as my *Calliste lamprotis* (Cont. to Orn. 1851, p. 65). That species closely resembles the present, but may be distinguished by its orange cap and brilliant golden-yellow ear-coverts.

The extreme inaccuracy of Dr. Tschudi's figure, which looks more like this species than the other, must be my excuse for committing this error, in which however I am not alone, as even in the Berlin Museum (where Tschudi's types ought to be known) I have observed the present bird called *xanthocephala*.

Mr. Gould's collection from Quixos contained examples of this species. My own specimens are from Santa Fe di Bogota.—*Proc. Zool. Soc.*, Nov. 14, 1854.

On the Spermatophora of the Crickets. By C. Lespés.

In the Crickets the ejaculatory canal does not turn back as in nearly all insects to form the penis. During copulation, which is accompanied by some singular manœuvres, the male introduces into the vulva of the female the extremity of a small apparatus which contains a drop of the seminal fluid. This spermatophore consists of a small horny vesicle, and of a slender, flattened appendage; the latter is the only part that penetrates into the vulva. In the course of a few hours the female drops the whole apparatus.

As soon as the male has lost one of these spermatophora, a new